

The role of pronouns in the *de re / de dicto* modal distinctions

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Abstract:

The syntactic, semantic, and metaphysical senses of the *de re / de dicto* modal distinction are explicated and applied to a simple case involving pronouns to reveal their inevitably theory-laden characterization (contrasting a Fregean from a Russellian analysis of PARs – i.e. propositional attitude reports) (§ II) Issues dealing with pronouns, sentential LF (logical form), vis-à-vis Stephen Neale’s (2005) sketches of an empirical research program directing future theories of utterance interpretation are discussed respectively in §§ III.a-c. I argue that Neale is advocating an approach which is best characterized as reliabilist, i.e. concerned with reliability, but not literal truth of the empirical consequences of theories dealing with word meaning or sentential LF. In the concluding section (IV) I discuss Kit Fine’s (2005) modal actualism, and show that it serves as a way of underwriting and complementing Neale’s empirical strategy. I argue that the Neale/Fine approach is the best methodological position for the researcher to assume when investigating the nuances of natural language phenomena involving pronoun binding. To this extent, the (syntactic, semantic, and metaphysical) *de re / de dicto* distinction, as substantiated and underwritten by Fine’s modal actualism, serves as a useful heuristic diagnostic aid in such an investigation directed toward such contextual phenomena involving pronoun binding in sentential LF.

I. Introduction

The *de re / de dicto* distinction can be characterized in terms of a scope ambiguity with respect to any modal operator Ξ . *Ab initio*, at any rate, such a distinction can be read in terms of a narrow or broad scope interpretation for any modal operator Ξ applied in any modal statement \wp involving the binding of its variables under Ξ . Consider, for example, the statement:

\wp : “It’s possible a (at least one) woman will win seat(s) in the upcoming election.”

In (first-order) modal logic, \wp can take the form: $\exists x: \diamond Wx \& W_E x$, where W and W_E stand for predicates “woman,” and “will win seat(s) in the upcoming election.” Interpreting the scope of \diamond narrowly (*de re*) would make \wp equivalent to the claim that, loosely speaking, “there is at least one woman to whom it is attributable that (she/they) may win seats in the upcoming election.” Conversely, in this narrow sense, the variable x is bound by the quantifier \exists lying outside the scope of \diamond . The sentence’s information content is directed primarily towards the *object* (in this

case, one (or more) woma(/e)n), hence *de re*. On the other hand, a *de dicto* reading of \wp above would be equivalent to the claim: “‘At least one woman will win seat(s) in the upcoming election’ is a possibility.” In other words, \diamond is attributed to the whole claim, so can therefore be exchanged with the existential quantifier to yield the form: $\diamond \exists x: Wx \& W_{Ex}$. The sentence’s information content is directed primarily towards a *statement* (‘At least one woman...’), hence *de dicto*.

In the case of propositional attitude verbs (PAVs: e.g., ‘believes,’ ‘knows,’ ‘thinks’) *opaque* contexts can occur within their scope. That is to say, in such cases *salva veritate* or truth-preserving substitution of singular terms fails, in a typical propositional attitude report (PAR).¹ The singular terms can either be treated as logical variables or pronouns in a sentence, but for reasons that will be discussed below, such singular terms, and hence such treatments, should not be considered equivalent. In such cases the *de re / de dicto* distinction (viewed technically as the case of a scope ambiguity under some modal operator like *B* –representing ‘believes that’ in epistemic logics) can become especially problematic. In the supplementary section of their article on PARs, McKay and Nelson (2005b), for instance, distinguish syntactic, semantic, and metaphysical senses of this distinction:

- **Syntactic:** Any sentence *S* is *syntactically de re* whenever it has a pronoun or free variable within the scope of an ‘opacity verb’ (i.e. epistemic operator *E*) that is bound by, or anaphoric on, a quantifier or singular term which lies outside the scope of *E*. Otherwise, *S* is *syntactically de dicto*.
- **Semantic:** A sentence *S* is *semantically de re* if *S* permits substitution *salva veritate*. Otherwise *S* is *semantically de dicto*.
- **Metaphysical:** A property or attribute *P*_– is *metaphysically de re* with respect to an object *o* if *P*_– directly attributes a property to *o*. (In more technical Fregean form: the one-place function *f* corresponding to property *P*_– can map *o* either to the true **T** or the false **⊥**. That is to say, the *concept f** is a well-defined two-place function corresponding to *f* where *f**(*o*,*x*), for any *o* in the domain of objects \mathcal{O} and $x \in \{ \mathbf{T}, \mathbf{\perp} \}$.) *P*_– is

¹ More precisely, in any propositional attitude report (PAR), of the form: “Agent [A] [PAV]s that-*p*” where *p* is (in principle) a full sentence, within the scope of the PAV. The opacity can be easily demonstrated. Consider, for instance, the situation described by the following PARs:

$s_\alpha(\alpha)$: “A believes that *Fα*.” $s_\beta(\beta)$: “A believes that *Gβ*.”

Suppose, unbeknownst to A, the proper names α β have the same reference. One can easily conjure examples in which substituting α and β changes the truth-values of s_α and s_β . To invoke Frege’s classical example, if A didn’t know ‘Hesperus’ (α) and ‘Phosphorous’ (β) had the same reference (Venus), and hence are coextensive, then even though in the case in which predicates *F* and *G* denoted ‘morning star’ and ‘evening star,’ respectively: $V(s_\alpha(\alpha)) = V(s_\beta(\beta)) = \mathbf{T}$, nevertheless $V(s_\alpha(\beta)) = V(s_\beta(\alpha)) = \mathbf{F}$. “It seems that something other than the reference of the name must be relevant to the semantic evaluation of the belief attribution,” so the neo-Fregean would insist. (McKay & Nelson (2005a), 3).

metaphysically de dicto with respect to an object *o*, on the other hand, if P_- only indirectly involves *o*. P_- is *independent* of *o* if it doesn't involve *o* at all.

II.a The *de re* / *de dicto* distinction within theoretical accounts of Propositional Attitude Reports (PARs)

In any theory of PARs, i.e. any account seeking to provide a systematic characterization (whether syntactic, semantic, epistemic, or ontological, or any combination thereof) for the status of what follows in the ‘*that-...*’ clause in any PAR², the *de re* / *de dicto* distinction presents itself as a “hard case” in a manner both internal and external to such a theoretical framework. For instance, the interrelations among the above (syntactic, semantic, metaphysical) distinctions are constituted by, and are hence internal to, the respective theoretical frameworks. For instance, a ‘naïve’ neo-Russellian³ who agrees with Russell that definite descriptions cannot function as singular terms would argue that *syntactic de dicto* entails *semantic de re*. At the outset, this may appear surprising, since in a syntactic *de dicto* PAR, one would imagine that the naïve neo-Russellian would assume that due to pragmatic reasons, depending on the definite descriptions

² See n.1 above.

³ I.e. anyone who holds the view that fundamental truth conditions for PAs dealing with belief attributions, *involve only objects and properties*, and *not the way they're represented*. A naïve neo-Russellian, for instance, would argue that $s_\alpha(\beta)$ and $s_\beta(\alpha)$ (in the example in n.1 above) are “wrongly” judged to be false by anyone *failing to appreciate the pragmatic implicatures* that $s_\alpha(\alpha)$ and $s_\beta(\beta)$ can typically generate (which in the circumstances in which A fails to recognize that α and β have the same referent, would therefore *not* include $s_\alpha(\beta)$, nor $s_\beta(\alpha)$). “[C]onfounding pragmatic responsibilities with our responsibility to avoid a falsehood can lead people astray concerning the fundamental semantics of belief attribution.” (McKay & Nelson (2005a), 7). ‘Naïve’ neo-Russellians contrast themselves with ‘contextualist’ (non-naïve) neo-Russellians, insofar as the latter insist that differences in how someone believes something are part of the *semantic* content(s) of sentences, *not the pragmatic* content(s). “[I]nformation semantically encoded by utterances of belief sentences...is sensitive to differences in the *way* a proposition is grasped.” (ibid., 12) Contextualist neo-Russellians should of course not be confused with neo-Fregeans, since the former still advocate the notion that despite differences in the *way* a proposition is grasped, as for instance semantically encoded by such utterances $s_\alpha(\alpha)$ and $s_\beta(\beta)$ in n.1 above, nevertheless such embedded sentences (like $F\alpha$ and $G\beta$ in $s_\alpha(\alpha)$ and $s_\beta(\beta)$) in belief- utterances $s_\alpha(\alpha)$ and $s_\beta(\beta)$ *express the same proposition* (or Russellian state of affairs). So for instance in the example in n.1 above, the (Russellian) proposition is expressed by the metaphysical state of affairs that β and α have the same referent (Venus). Neo-Fregeans, on the other hand (to cast the *Bedeutung/Sinn* distinction in more general terms) argue that PAVs semantically induce a *reference-shift for propositions*. That is to say, a proposition *p* in the scope of a ‘*that-...*’ clause in a PAR no longer represents the object of *p*’s ordinary referent (*p*’s *Bedeutung*) but rather the agent A’s *way of representing an object* (*p*’s *Sinn*). In terms of the epistemological ramifications, though (in the main) neo-Russellians disagree with Russell that thought is ultimately grounded ‘by acquaintance’ with extra-mental individuals (e.g. metaphysical universals constituting a sense-datum), they nevertheless agree that thought is ultimately grounded on *singular propositions*, or propositions about an object *o* which serves as its direct constituent. “[However there are] important [metaphysical and epistemological] differences among neo-Russellians concerning what extramental objects can be thought of directly and, more importantly, which relations (perceptual, communicative, etc.) ground and are necessary for direct thought.” (ibid., 7) Neo-Fregeans, on the other hand, are in accord with Frege, insofar as they believe that “all thought [is] indirect, in the sense that a thought is about an object *o* not in virtue of having *o* as a direct constituent, but rather by having a *surrogate* as a direct constituent that then determine[s] *o* most plausibly in the form of satisfaction conditions.” (ibid., 6, italics added)

the agent accepts, a *salva veritate* substitution principle could be violated: Thus no general substitution principle involving any singular terms results, i.e. *syntactic de dicto* entails *semantic de dicto*.⁴ And indeed, most naïve neo-Russellians agree with the aforementioned entailment, insofar as they disagree with Russell’s notion that definite descriptions cannot function as singular terms. On the other hand being epistemically stingy (like Russell was) in terms of what constitute singular terms would of course enormously restrict the set of what in principle is *ab initio* allowed substitution *salva veritate*, hence enabling such a rule an unqualified range.⁵ For the neo-Fregean, on the other hand, since PA verbs shift the reference of any sentence in their scope,⁶ *syntactic de dicto* entails *semantic de dicto* without qualification. “A large part of the motivation for accepting a [Sinn/Bedeutung] distinction for singular terms is to ensure that substitution within the scope of an attitude verb is blocked.” (McKay & Nelson (2005b), 3)

Conversely, “naïve neo-Russellianism, and perhaps neo-Russellianism in general seems to give rise to a very interesting reduction of the *de re* to the *de dicto*.” (ibid.) This holds for both syntactic and semantic cases. For if an agent A reports on a true state of affairs, i.e. a true Russellian proposition in a (syntactically or semantically) *de re* fashion, then automatically there exists a correspondingly true (syntactic or semantic) *de dicto* PAR, since (for the naïve neo-Russellian at any rate) the basic truth conditions for PARs involve only Russellian propositions, i.e. metaphysical states of affairs.⁷ To harbor a (true) belief implies merely that the agent A stand

⁴ See n. 3 above. Examples like this (for the naïve neo-Russellian) are easy to come by. For instance, consider the situation in which (agent) Bill mistakes the woman standing across on the other end of the auditorium for his wife (Sue) who happens to love Shakespeare’s Sonnets, while the woman Bill mistook for his wife dislikes Shakespeare’s Sonnets. Then the syntactic *de dicto* PAR: “Bill believes that Sue loves Shakespeare’s Sonnets” also (for the naïve neo-Russellian) would have a semantic *de dicto* reading, since substituting ‘Sue’ with the definite description ‘the woman standing across from Bill at the other end of the auditorium’ produces a false Russellian proposition, or state of affairs. Bill’s mistaken belief, for the naïve neo-Russellian, of course can be treated as a pragmatic issue.

⁵ So, for instance, using the PAR in n. 4 above, the definite description: ‘the woman standing across from Bill at the other end of the auditorium’ is automatically ruled out as a singular term, as well as, for that matter, any pronoun like ‘she’ (referring to the woman across the auditorium) since in such a context, since ‘she’ merely refers to the latter definite description in disguise. What would function as a singular term would be other co-referring proper names Bill’s wife Sue may have, like her middle and last name. “Because the truth of [any PAR] generates the truth of...any belief sentence resulting from the substitution of a co-referring *genuine singular term*...syntactic *de dicto* is semantically *de re*.” (McKay & Nelson (2005b), 3)

⁶ See n.3 above.

⁷ See n. 3 above. McKay & Nelson qualify the case for contextualism (non-Naïve Russellian) with ‘perhaps’ in the above quote since the contextualist admits into the *semantics* of PA reporting sentences ‘ways in which [its constituent Russellian] proposition is grasped.’ This of course makes the issue of determining semantic truth-conditions a little murkier, insofar as one considers such contextual factors applying to sentences reporting the (de-contextualized) Russellian proposition. Nevertheless, the *de dicto* → *de re* reduction seems to naturally apply in the contextualist case as well, as long as one focus on proposition-talk only.

in a particular relation to the proposition p , or state of affairs. Such a stance between an agent and the state of affairs, viewed metaphysically, is independent of the epistemic, semantic, syntactic issues arising out of *de dicto* and *de re*.

The consequences of the above (neo-Russellian) reduction has implications for the case of the metaphysical *de re/de dicto* distinction as well. As mentioned above, since (true) ‘belief’ for a neo-Russellian merely involves the agent standing in a particular relation to a state of affairs, then (semantic and syntactic) *de dicto* entails metaphysical *de dicto*: Semantic or syntactic *de dicto*, whether treated in terms of pragmatics by the naïve neo-Russellian or as a semantic manner of ‘grasping’ a proposition reflected in an agent’s belief-sentence by the contextualist neo-Russellian, entails that the attributions lay primary emphasis on the *agent*, and hence only indirectly involves the object(s) (or states of affairs) in question. But the above reduction (from *de dicto* to *de re*) indicates that such a *de dicto* emphasis on the agent at best is really a question of style, when viewed metaphysically, and not one of substance.⁸

For the neo-Fregean, however, any relation between semantic and metaphysical senses of the distinction becomes more problematic, due to the substantially metaphysical and epistemic Fregean notion that PA verbs introduce shifts of reference for propositions. For example, explanatory problems can emerge even if the Fregean adopts the logically weaker notion that semantic *de re* and metaphysical *de re* are related.⁹ Consider the following *de dicto* and *de re* variations of the sentence S : “John believes that the Earth is round” (used in n.9 below):

S' : “John believes the third planet from the Sun is round.”

S'' : “The third planet from the Sun is such that John believes it to be round.”

Certainly the truth of S'' , along with the substitution of ‘Earth’ for the definite description: ‘third planet from the Sun’ would entail S . However, whereas the neo-Russellian would have a simple

⁸ Technically stated, to a neo-Russellian, then belief is a two-place relation denoted by the ordered pair: $B = \langle _A, _p \rangle$ (where the slots stand for the indices for the respective agent (A) and the Russellian proposition (p)). *De re* lays emphasis the latter ‘slot’ whereas *de dicto* emphasizes the former. But such emphases obviously do not change the constitution of B , A , or p in any significant sense (metaphysical, epistemic, or semantic).

⁹ A natural assumption for the Fregean, since any statement directly referring to attributions of an object (or the attributions’ referent, i.e. *Bedeutung*) is by definition metaphysically *de re*, and certainly allows substitution *salva veritate* for singular terms. For instance, consider the (semantic and syntactic) *de re* statement: “The Earth is such that John believes it’s round.” It is metaphysically *de re*, (with respect to the Earth) as it directly attributes a property (its roundness) which underwrites such a belief of John’s.

explanation for why S' entails neither S'' nor S ,¹⁰ the neo-Fregean would be unable to, without “run[ing] against a thorough-going reduction of the *de re* to the *de dicto*.” (McKay & Nelson (2005b), 4). This is primarily due to the shift in reference induced to the proposition falling under the scope of PA verb ‘believes,’ which of course in the S' case depicts John’s *way of representing*, whereas in the S'' case depicts properties of the referent (the object Earth).

In summary, then, some of the possibly logical interrelations among the syntactic, semantical, and metaphysical senses of the *de re / de dicto* distinction depend internally on whatever theoretical framework of PARs (neo-Fregean or neo-Russellian) one is advocating¹¹, in a way which can be depicted in the diagram below:

¹⁰ For reasons mentioned in the paragraph above, as well as in n. 8 above. For the neo-Russellian, John merely needs to stand in the particular relation $\langle \text{John}_A, \text{The third planet from the Sun is round}_p \rangle$. However, S' can still be true even if John does not believe the proposition (that the third planet from the Sun is round). The naïve neo-Russellian would argue that pragmatics might mislead John from what he would semantically assent to (for instance it would be a matter of pragmatics if John lived in distant antiquity in a culture harboring a flat Earth metaphysical outlook), while a contextual neo-Russellian would argue that John was semantically led astray based on his ‘way of grasping’ such a proposition. (For instance, perhaps he believes the Earth is round, but doesn’t know that it’s the third planet from the Sun).

¹¹ Which by no means corner the market on contemporary theoretical accounts of PARs. Other positions include ambiguity, sentential, and unstructured-propositionalist theories. The key area of overlap of all three theories concerns the metaphysical issue regarding the existence and properties of ‘propositions.’ Sententialists (following Carnap) argue that there is no such thing as a proposition: Whatever is in the scope of a PA verb can be completely characterized by a theory of *sentence* syntax and semantics alone. Non-structured propositional accounts (Lewis, Stalnaker) argue that propositions do not have any properties corresponding to an internal structure (propositions are just sets of possible worlds). Ambiguity theorists ascribe two notions of ‘believes that $-p$ ’: A notion of *acceptance* (applicable to what Frege would have noted as *Sinn*) dealing with sentential contexts involving belief in which the agent’s *way of representing* (a state of affairs) is fundamentally at issue, as opposed to *doxating* (i.e., a Fregean *Bedeutung*) in which the agent’s belief of a state of affairs in itself (a Russellian proposition) is of central concern. Quine, for instance, tried to syntactically parse out two senses of ‘belief’ (respectively analogous to the above distinctions): a three-place ‘relational’ notion $B_{rel} = \langle _A, _o, _a \rangle$ with indices corresponding to the agent, the agent’s ‘object’ and ‘abstract,’ as well as a two-place ‘notional’ case: $B_{notional} = \langle _A, _p \rangle$ corresponding to the agent and proposition the agent advocates. Ambiguity theorists tend to remain metaphysically agnostic regarding the issue of existence and properties of propositions. I will not discuss these accounts in this essay for reasons considered by McKay & Nelson (2005a) as their serious shortcomings. In the case of ambiguity theory, for instance, “such a strategy [of stipulating two or more meanings] will not work for ‘believes’...because the situation is more complicated. Some belief attributions involve sentences that use other terms in a purely referential way but use other terms in a way that seem to require getting the mode of representation right.” (2005a, 21) Moreover, in the case of sententialism, the authors argue that there seems to be no legitimate way to prevent it from collapsing into propositionalism, when seeking to bootstrap it with all the problems associated with agents having thoughts unexpressed or unexpressible as sentences, (the latter case occurring in which agents possess no linguistic competence in which to sentimentally express PAR utterances in the first place). Last of all, as my discussion focuses on issues regarding scope, this automatically evinces a notion that propositions – whatever they may turn out to be—should at the very least, like Frege’s notion of *Gedanken*, be objects of thought which are public, language-independent, and most importantly *abstract entities harboring a structure* that reflects, on whatever level of abstraction, the syntactic structure of natural language sentences expressing such thoughts. (2005a, 14). This is a metaphysical assumption shared both by the (neo-)Fregean and the (neo-)Russellian.

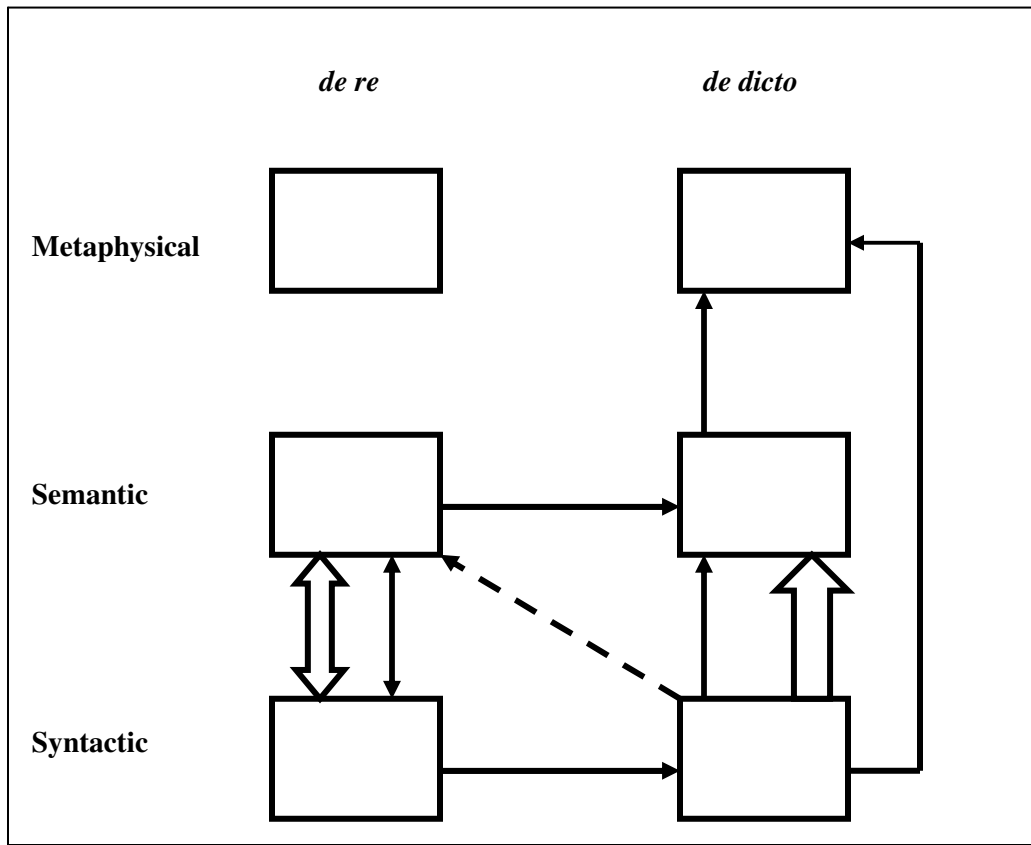


Diagram II.1

The solid arrows represent (by and large) the neo-Russellian position. The dashed arrow represents the subclass of naïve neo Russellians (discussed above) who agree with Russell that definite descriptions cannot function as singular terms, whereas the outlined arrow represents the neo-Fregean position.¹²

II.b The *de re* / *de dicto* distinction external to theoretical accounts of PARs

As suggested in the above Introduction, I will briefly conclude this section here by mentioning in passing the importance of keeping in mind that such a distinction is not constituted by theoretical accounts of PARs per se (whether neo-Russellian, neo-Fregean, or other¹³). *External* to such accounts, the distinction, as reflecting a fundamental case of a scope or structural

¹² I am only including in the diagram some of the more controversial aspects regarding the question concerning the interrelations discussed above. Obvious cases (like reduction from semantic *de re* to metaphysical *de re*—something both the Fregean and the Russellian would agree on) are omitted so as not to clutter up the diagram excessively.

¹³ For ‘other’ accounts, see my disclaimer in n. 11, above.

ambiguity,¹⁴ has been invoked metatheoretically in attempts to resolve or further substantiate their associated methodological shortcomings. Neo-Fregean accounts, for example, have been criticized for not adequately making sense of *de re* beliefs.¹⁵ The *de re / de dicto* distinction has also been invoked in attempts to compensate for certain entailments that fail under ‘paratactic’ sententialist accounts, i.e. accounts that deny the existence of propositions, and in turn advocate that whatever is in the scope of a PA verb can be adequately characterized by *sentence* syntax and semantics alone.¹⁶ Others have sought (somewhat dubiously) to ascribe the *de re / de dicto*

¹⁴ Depending on where one’s sympathies lie. For the philosopher of language or mind pre-disposed towards neo-Russellianism, the distinction might be treated more as a question of a (syntactic) structural ambiguity, rather than something fundamentally logical or semantical like that of scope. As shown in the above section, for instance, certainly the neo-Russellian is equipped with a greater amount of methodological ability to show how *de dicto* can reduce to *de re*. Moreover, authors like Neale (2005) seem to advocate something akin to a naïve neo-Russellian position, insofar as he leaves much up to *empirical* issues such as speaker intentions, when attempting to develop a general theory of interpretation of pronouns and their (particular) binding characteristics ((2005) 223-226). A naïve neo-Russellian might just as well assume, for instance, that Neale’s overtures toward constructing a general theory of utterance interpretation that is fundamentally empirical, though not (metaphysically or epistemologically) contextualist ((2005) 177) fits the bill for what a naïve neo-Russellian would chalk up as ‘pragmatics’. However, one must keep in mind that Neale means something more specific in his use of the latter term: *linguistic* semantic and pragmatic *constrain* speaker’s intentions. Aside from giving Frege more explicit mention, on the other hand Recanati’s (2005) sympathies might lean more toward neo-Fregeanism, insofar as he attempts to construct an *abstract* propositional frame model through which to seat his theory of pronouns, based on a more general notion of anaphora. However, as shall be discussed in the sections below, a more careful distinction must be made between LF (logical form) than the remarks made in the previous section concerning propositional structure—versus sententialism (n. 11, above).

¹⁵ For instance, consider the sentence (McKay & Nelson (2005a), 4):

S_{II} : “Jack₁ and Jill₂ went up the hill and Jack₁ believes that she₂ went up first.”

According to the neo-Fregean, “she went up first” is in the scope of the PA verb ‘believes’. However, the anaphoric use of she refers to Jill, lying outside its scope. So the pronoun and singular term ‘she’ should be treated as an instance of syntactic *de re*, of course running contrary to the Fregean account here (which *a fortiori* would rule it as an instance of *de dicto*). This is an instance of the more generally serious shortcomings of the Fregean accounts, which include the *Problem of Indexicals* (as depicted in the *de re* issue of S_{II}) as well as problems involving the *Variability of Sense*, reflected in the PAR ‘Many people believe that-*p*’, since *Sinn* is anchored and varies according to the beliefs and thoughts of *individuals*. Such issues reveal why most contemporary philosophers of mind & language accept some version of neo-Russellianism, wherein at the very least can sensibly talk about the only semantically relevant value of a singular term in the scope of a PA verb is the term’s *reference*. (ibid. (2005a), 6)

¹⁶ See n. 11 above. Consider the following entailment which would intuitively appear valid (based on \exists -introduction rule in standard FOPL):

P1. A believes that *Ps*
P2. *s* exists
∴ $\exists x$: A believes that *Px*

This entailment, however, is *invalid* in the paratactic account. Lepore & Loewer ((1989), *Midwestern Studies of Philosophy*, vol. 14: 338-356) invoke the *de re / de dicto* distinction by adding a premise stipulating that the above entailment should simply be taken for granted. “The success...of their strategy depends on the plausibility of the original entailment intuitions turning on our implicitly assuming [such] an additional premise in question.” (McKay & Nelson (2005a), 16)

distinction to the ‘accept/doxate’ senses of ‘believes-that’ in ambiguity theories.¹⁷ “[However] [o]ur intuitions support the idea that there are two different kinds of uses of singular terms (*de re* and *de dicto*) in belief attributions, but that will not divide belief *attributions* into the *de re* and *de dicto*, because [for instance] names being used in different ways can occur in a single attribution.” (McKay & Nelson (2005a), 21)

III.a A closer look at pronouns vis-à-vis the *de re* / *de dicto* distinction

The syntactic *de re* / *de dicto* distinction mentioned above depicts substitutions of singular terms in terms of logical variables or pronouns. The two kinds of terms, however, are definitely *not* equivalent or interchangeable. Complex issues of binding and scope can arise in the case of pronouns, that are not apparent in the case of logical variables.¹⁸

The manner of the precise relationship between pronouns and [logical] variables is one among many that come up in the study of ...ways in which the interpretation of occurrences of certain expressions, particularly third-person pronouns, are tied to the interpretation of occurrences of other expressions, the relationship is nowhere near as straightforward as many philosophers supposed initially. (Neale (2005), 169)

Consider, for example, the sentence S_1 : “Bob₁ thinks (that) he_x heard him_y.” Syntactic, semantic, and metaphysical *de rel de dicto* senses depend of course on the ways in which one may ascribe reference to x and y in the context [he_x heard him_y]. The table below lists all possible cases to understand S_1 : (where: 1 refers to Bob, 2 and 3 refer respectively to two other persons distinct from Bob, e.g. ‘Joe,’ ‘Doug’):

Table III.1	x	y
Allowed case (a)	1	2
Allowed case (b)	2	1
Allowed case (c)	2	3
Forbidden case (a)	1	1
Forbidden case (a)	2	2

¹⁷ See n. 11 above. Such an ascription “has many difficulties, and [aside from that], the *de dicto-de re* terminology is used in other ways [besides ‘accept’ vs. ‘doxate’], to mark distinctions among beliefs or distinctions among belief attributions.” (McKay & Nelson (2005a), 20)

¹⁸ To name one instance, consider the S_{JJ} example discussed in n. 15 above: an instance of the anaphoric use of pronouns comprising the Problem of Indexicals suffered by the neo-Fregean accounts. Neale (2005) certainly highlights the distinction (between pronouns and logical variables) whereas Recanati (2005) seems to gloss it over. “Variables...have two uses: they can be bound by quantifiers, or they can remain free...[w]ith pronouns the situation is similar.” (287-288) Perhaps this difference of perspective corresponds to Neale’s and Recanati’s seemingly orthogonal aims (empirical versus structured propositional accounts), see n. 14 above.

What is of interest here are naturally only the allowed cases ((a) – (c)) in Table III.1.

Consider Case (a): ($x = 1, y = 2$): The (anaphoric) use of he_x is obviously syntactically *de re*. The PAR S_1 cast in a Russellian propositional form:¹⁹

$$S_1 : \exists x \forall w (Bw \rightarrow w = x) : TH_2x$$

(where: T is the epistemic operator ‘thinks’ (that) and B, H_2 denote predicates ‘Bob’ and ‘heard (Joe)’ respectively). Expanding the predicate H_2 into a two-place relational predicate to include the specific information about Joe, then S_1 takes on a Russellian propositional form:

$$S_1' : \exists x \forall w (Bw \rightarrow w = x) : T \exists y \forall z (Jz \rightarrow z = y) \& Hxy$$

indicates that him_y is syntactically *de dicto*: The quantifier(s) $\exists!y \equiv \exists y \forall z (Jz \rightarrow z = y)$ binding ‘Joe’ obviously lie inside the scope of T , i.e. what Bob happens to think he heard. Similarly, he_x and him_y take on syntactically *de dicto, de re* senses in case (b): ($x = 2, y = 1$) respectively, and both take on *de dicto* senses in case (c): ($x = 2, y = 3$)

Now consider, on the other hand, in Fregean propositional form the thought contents expressed in S_1 ²⁰ in case (a):

$$THINKS[b, HEARD[j, d]]_{(i+1)} \Rightarrow [\lambda x \lambda y \lambda z : TH[x, HD[y, z]]_{(i+1)}]_{(i+2)}$$

The $(i+1)^{th}$ level 2-place relational predicate (TH) nests the constant Bob (b) with the $(i+1)^{th}$ level 2-place relational predicate nests the constant Bob (b) with the i^{th} level 2-place relational predicate (HD) predicate which in turn nests the constants Bob (b) and Joe (j). In case (b):

$$THINKS[b, HEARD[b, j]]_{(i+1)} \Rightarrow [\lambda x \lambda y : TH[x, HD[y, x]]_{(i+1)}]_{(i+2)}$$

...And in the case (c):

¹⁹ In the (neo-Russellian versus neo-Fregean) spirit, as discussed in II.a, I start off this section depicting PARs in their respective Russellian and Fregean forms. This can of course prove somewhat misleading, since such depictions of (presumed) propositional structure excessively abstract away from the *sentential* issues of structure, binding, and scope that must be brought to light, vis-à-vis pronouns. I discuss the latter issue in greater depth in the subsequent sections.

²⁰ See n. 19, above. The subscripts refer to the associated level of nesting the two-place predicates share: If “heard” is i^{th} level, then “thinks” is $(i + 1)$ -level, and the entire concept, suitably abstracted (denoted by “ \Rightarrow ”) becomes $(i + 2)$ level.

$$THINKS[b, HEARD[j, d]]_{(i+1)} \Rightarrow [\lambda x \lambda y \lambda z : TH[x, HD[y, z]]_{(i+1)}]_{(i+2)}$$

So in all three cases, he_x and him_y assume syntactic *de dicto* senses, as they're all embedded in the $(i+1)^{th}$ level 2-place relational predicate (*TH*). Hence the syntactic *de re/de dicto* senses of the pronouns depend on the presumed structure of Russellian versus Fregean propositional forms.²¹ As shown in diagram II.1, what holds true in the case of the syntactic distinction is likewise true for the semantic distinction (and vice versa).

Now consider the sentence S_2 : “Bob₁ thinks he_x heard himself_y.” The table below lists all possible cases to understand S_2 : (where: 1 refers to Bob, 2 refers to ‘Joe’)

Table III.2	x	y
Allowed case (a)	1	1
Allowed case (b)	2	2
Forbidden case (a)	1	2
Forbidden case (b)	2	1
Forbidden case (c)	2	3

Consider Case (a): ($x = 1, y = 1$): The use of he_x and $himself_y$ is syntactically *de re*.

The PAR S_2 cast in a Russellian propositional form:

$$S_2 : \exists x \forall w (Bw \rightarrow w = x) : THxx$$

Whereas in case (b): ($x = 2, y = 2$)

$$S'_2 : \exists x \forall w (Bw \rightarrow w = x) : T \exists y \forall z (Jz \rightarrow z = y) \& Hyy$$

The use of he_x and $himself_y$ is syntactically *de dicto*.

On the other hand, in Fregean propositional form the thought contents expressed in S_2 in cases (a) and (b) are:

²¹ The discrepancy between Fregean and Russellian accounts can indeed be ascribed to the Problem of Indexicals for the Fregean account, as discussed in n. 15 above. As demonstrated above, the neo-Fregean has no choice but to render both pronouns by default a *de dicto* reading, flying in the face of the anaphoric sense for $x=1$.

$$S_2 : THINKS[b, HEARD[b, b]]_{(i+1)} \Rightarrow [\lambda x : TH[x, HD[x, x]]_{(i+1)}]_{(i+2)}$$

$$S'_2 : THINKS[b, HEARD[j, j]]_{(i+1)} \Rightarrow [\lambda x \lambda y : TH[x, HD[y, y]]_{(i+1)}]_{(i+2)}$$

Again indicating syntactic *de dicto* for both pronouns in both cases.

III.b. Whither The Role Played by Form?

As I mentioned in n.19 above, segueing into a more detailed discussion of pronouns (specifically in terms of recent semantic and syntactic theories involving them²²) evinces a more precise discussion of syntactic form. Certainly such a study involves an interesting intersection of issues including areas such as the philosophy of mind, language, and logic.²³ But such an overlap can also introduce the risk of the associated methods from such disciplines “talking past one another:” For the philosopher of language predisposed more towards issues concerning epistemology and the philosophy of mind per se, the above characterizations of PARs in terms of their abstract Fregean and Russellian structure, (as well as the metaphysical assumption that such things like propositions exist and have a structure that the Russellian and Fregean forms seek to capture²⁴) may have a convincing and fundamental tone. On the other hand, the more empirically-driven philosopher of language, sensitive to issues of grammar (whether ‘deep’ or ‘surface’), and context, etc. is likely to protest that the above abstract characterizations of PARs may at best conceal more than they reveal. At worst, the empirically-driven philosopher of language may further contend, casting such distinctions like *de re / de dicto* in such a form, vis-à-vis issues of binding and scope concerning pronouns, may prove itself to be entirely misleading: Such artificial reconstructions falsely reify certain rarified distinctions bandied about by logicians, that in the end are shown to be irrelevant when seen from the perspective of actual language competence and performance.²⁵ So what level of structure can advocates of seemingly opposing theoretical tendencies actually find common ground in?

²² Neale (2005), Recanati (2005), Pietroski & Hornstein (2002)

²³ “All of the suggestions about pronouns and binding I have sketched here are based on...ideas from generative grammar, the philosophy of language, and philosophical logic that seem to intersect in interesting ways.” (Neale (2005), 277). See also Recanati (2005), pp. 289-290, 313-314.

²⁴ By no means an assumption entirely free from controversy, see n. 11 above.

²⁵ For example, Pietroski & Hornstein (2002) argue that the PARs should *not* admit of a *de re* reading when viewed from the standpoint *what is actually grammatically generable*. For instance, in the case of the PAR: “Ralf believes that the richest man is happy,” they give reasons why the LF (in Chomskian tree form): ‘[[the richest man][Ralph [believes [that [t [is happy]]]]]’, corresponding of course to the *de re* version (regimented for instance in Russellian modal form): $\exists x \forall y (RM_y \rightarrow y = x) : BRalfHx$ (where RM, H denote the 1-place predicates ‘richest man,’ ‘is happy’, and B denotes the ‘believes that - ...’ modal operator) *cannot* be generated “in accordance to principles that govern human language.” (24) This seems

Since the 1990s, the study of *generative grammars* (inspired of course originally by the Chomskian linguistic research program) has shifted towards a program described in terms of *minimalist grammar*, in which lexical items like units of sentence-meanings are bifurcated fundamentally into two separate forms: LF and PF (logical and phonetic forms respectively), as opposed to previously conceived LFs and PFs generated respectively by SS and DS (of surface and deep structure) forms. (Pietroski & Hornstein (2002), p. 8) Moreover, in the minimalist framework, the emphasis of structures (whether phonetic or logical) primary shifted over from a perspective of constructive/generative, to one of *constraint*:

[S]yntactic theory evolved considerably in the light of *minimalist assumptions*, the net effect which was to restrict the posits of grammatical theory...to those that are conceptually necessary or empirically unavoidable...[O]ne consequence of the empirical outlook is that all properties of sentences relevant to sound and meaning—and this includes *binding* properties—should be derivable from quite general considerations about the way the language faculty must engage with [presumably] two other cognitive systems...the articulation of sounds and their perception (the *sound system*) the other trading in intentional-conceptual representations (...the *intentional system*)...[The minimalist assumes that] a language is a computational system that generates pairs $\langle \pi, \lambda \rangle$ of representations, where π is a PF (or ‘Phonetic Form’) to be read by the sound system, and λ an LF (or ‘Logical Form’) to be read by the intentional system. (Neale (2005), 228-229)

In term of a (subtheory) of pronouns:

[E]mphasis in...linguistics shifted dramatically [away] from rules for generating (and interpreting) particular linguistic structures to *constraints on possible structures and their interpretations*...The interpretation of pronouns was prominent in this work because of the importance within the emerging theory of a subtheory that concerned itself with the *binding* of one expression by another. (ibid., 211). [Furthermore] [n]ot only do LFs fail, for example, to specify references for referentially independent occurrences of pronouns, they [also] fall short of being full-blown intentional representations in all sorts of other ways. (ibid., 230)

As the methodological focus in the study of language ‘simplified’ or (more accurately) altered to a perspective in which semantics of LF provide constraints by and through which ‘pragmatic’ and other factors such as speaker intention²⁶ can course through,²⁷ the notion of what

to confirm one’s suspicions that a *de re* reading of the above PAR might otherwise entail—Russellian commitments notwithstanding—that “[a] *psychological* report has a reading on which it *entails* that there is a richest man to whom Ralph is mentally related.” (23)

²⁶ See n. 14, as Neale distinguishes these.

²⁷ Reminiscent of the ‘kinematics/dynamics’ distinction, first introduced in Modern thought via the physics of Galileo (in which kinematics provide the constraints of all *possible* classes of motion for a give physical system in a particular context *c*, while dynamics represent the *actual* behavior of such a system within such a context *c* modulo its initial conditions). Indeed, such an analogy indeed governed the original methodological assumptions of Chomski’s research program (Pietroski, personal communication).

constitutes an LF grew in breadth and complexity. (Pietroski (2004)) Whether representing *sentential* syntactic structure using LFs incorporating some Russellian, Fregean, Davidsonian event-based, Chomskian tree, or, for that matter, any mish-mash involving any of the aforementioned, or otherwise, one should *not* confuse this endeavor with a *sententialist* program.²⁸ The latter assume a metaphysical assumption denying in the existence of propositions, whereas the minimalists focus on the question of what ultimate *form* sentences are represented in the cognitive-intentional system. One can remain metaphysically agnostic or minimalist concerning the issue of the existence and presumed properties of propositions, and still work in a minimalist framework.²⁹ Hence the ensuing sections shall focus more on talk of LFs of *sentences*, (as for instance represented by what is found in the scope of a PA verb in a PAR) though this should not be construed as a shift towards sententialism.

III. c. Pronouns, *de re / de dicto* in the Confines of Sentential LFs vis-à-vis Stephen Neale's 'Empirical' Strategy

Issues such as relations of scope of course still play a central role in the case of the study of LFs in minimalist grammar. “[T]he human language system presumably interfaces with other cognitive systems devoted to (i) the articulation and perception of linguistic expressions, and (ii) the use of such expressions in thought...[in which] scope relations are germane to the latter [system (ii), primarily acting on LFs].” (Pietroski & Hornstein (2002), 8) The question of interest, of course, stems from *how* ambiguities of structure and scope are characterized within such complex constraints delimited by natural language syntactic and semantic LF. “The formation of genuine intentions is severely constrained by belief, and a speaker’s referential intentions are no exception, being constrained by knowledge of word meaning and syntax, tacit beliefs about who was speaking, who was being addressed, who was salient in the conversational context, and much more besides.” (Neale (2005) 222). Certain irreducibly *empirical* contingencies (as reflected for instance in the hypothesized cognitive-intentional systems that

²⁸ Cf. n. 11, above.

²⁹ This is of course not to say that such issues do not overlap. For on the one hand, certain sententialists describe contents of PAs in terms of ILFs (or interpreted LFs) (Nelson & McKay (2005), 17). On the other hand, Neale’s (2005) empiricist leanings cause him to confine his discussion on structure to *sentential LFs* alone. However, it would be a mistake to construe him as a sententialist, as his methodological aim is different. “I am not articulating a psychological theory of what is taking place in the heads of [speaker] A and [hearer] B...but rather giving a philosophical reconstruction of what a psychological theory must explain, in much the same way Grice does...” (ibid., n. 102, 226) On the other hand, Recanati (2005), though (as in the case of his (2002)) his theory focuses overall on context and pragmatics, still he is willing to admit more talk of Fregean-Russellian levels of abstraction. “Anaphora [though] seen as a ground-level phenomenon...we [still] abstract complex predicate[s] and use [them] to form higher-level [quantified] statement[s].” (290) (See n. 14, above)

generate and recognize sentential LFs) in natural languages present a strong case for believing that the complexities appearing in LF scope and structure wouldn't reflect with equal likelihood, let alone if at *all*, the space of all *logical* possibilities as presented in some formal language(s).³⁰ “[S]emantics is concerned with ‘internalist’ features of linguistic expressions, rather than truth *per se*...a semantics that makes the right theoretical cuts will not *itself* associate sentences with truth-conditions.” (Pietroski (2003), 1) The issue concerning whether (syntactic, semantic, or metaphysical) notions of the *de re / de dicto* distinction persists in some non-trivial fashion regarding sentential LFs involving pronouns is inextricably interwoven with their *use*: whether bound, anaphoric, or free.

Consider, for instance, a variant on the example discussed in III.a above:

S_3 : Some man_{*x*} thinks (that) Joe_{*y*} heard him_{*y*}.

In the case in which $x = y$, the pronoun ‘him’ assumes a bound use (e.g. bound to the quantified subject at the head of the sentence). The pronoun is bound by the subject outside the scope of the PA verb ‘thinks’, and hence assumes a syntactic *de re* reading.³¹ In the case $x \neq y$ and $y \neq 2$, the pronoun ‘him’ assumes a free use, in which contextual factors outside the information offered by the sentence (whether semantic or syntactic introduced by its LF form, or other factors attributed to ‘pragmatics’³²) which lying in the scope of the PA verb is *de dicto* (both syntactic and semantic). In the (grammatically forbidden) case $x \neq y$ and $y = 2$, the pronoun assumes an anaphoric use.

If this were the end of the matter, then one may assent to Recanati’s observation concerning the pronoun-variable analogy (2005, 287-288). Neale, however, sharply critiques any such attempts to gloss over the structural distinction between pronouns and variables, by focusing constructively on the complex issues of *binding* alone.³³ The table below lists some of the more

³⁰ See the example in n. 25 above, concerning Pietroski & Hornstein’s (2002) demonstration of the unlikelihood of a LF being generated which would correspond to a *de re* interpretation of the PAR “Rolf believes that the richest man is happy,” i.e. a PAR whose *that* clause contains a definite description replaced by a (singular term) pronoun ‘he’ corresponding to a free use.

³¹ Resulting, of course, in the problem confronting the neo-Fregean’s failure to account for *de re* uses inside the scope of a clause embedded by a PA-verb, as discussed in n. 15 above.

³² Which, of course, are interwoven with contextual factors to an extent that seems to be in the eye of the researcher beholding his or her own particular conception of the ‘semantics/pragmatics’ divide (Szabo (2005), pp. 5-7). As discussed above, for example, Neale (2005) does *not* include speaker intention as part of the ‘pragmatic’ factors (n. 29 above).

³³ Neale (2005), pp. 228-272. After listing numerous counterexamples to Binding Principles (A, B, C) as originally introduced by Chomski (*ibid.*, 215-217):

According to Neale, the above structural disanalogies between singular terms exhibited in natural languages exemplified by pronouns, versus singular terms like variables in formal languages, is just the tip of the iceberg. “Pronouns are just the beginning: quite generally, what a speaker says is underdetermined by the meaning of the sentence uttered, even relative to reference assignment.” (197) Of course, whether such factors affect truth conditions and truth-falsity of speaker assertions is a matter of some debate. (170) Nevertheless, the broadly empirical program Neale sketches out (as part of the goal towards a broader theory of utterance interpretation) seems to lend credence to Pietroski’s (2003) aforementioned remark that “semantics is concerned with ‘internalist’ features of linguistic expressions, rather than truth *per se*...a semantics that makes the right theoretical cuts will not *itself* associate sentences with truth-conditions.”

Neale lists twenty-four points comprising his agenda (178-196). Selected ‘theory-laden’ points worth mentioning here³⁴ in passing include: (EA) the *epistemic asymmetry* between speaker and hearer,³⁵ (RF) what a speaker means/*refers* can be *factored* into utterance and implication,³⁶ (CS) speaker’s (syntactic, semantic, or pragmatic) *competence* vis-à-vis LF *semantics*.³⁷ The aforementioned theses suggest the open-ended character of the phenomenon of utterance interpretation Neale assumes in his empirical agenda, as explicitly characterized in his central epistemological and metaphysical theses of *underdetermination* (Point 21, 192-194):

- **(Epistemological) Indeterminacy Thesis (IT)**

³⁴ I have actually simplified five of Neale’s points (4, 7, 11, 18, 19) into the three thematically points (EA), (RF), (CS) listed here.

³⁵ “The epistemic asymmetry of speaker and hearer underscores (i) the need to separate the *metaphysical* question concerning what *determines* what A means and the *epistemological* question concerning what is used by others to *identify* what A means and (ii) the need to scrutinize simplistic appeals to *context*, *maxims of conversation*, *salience*, and *pragmatic factors* which are frequently (and mistakenly) introduced together with *intentions* in contemporary discussions as if these things conspire to bridge certain interpretative gaps.” (181)

³⁶ More precisely, what speaker A means by uttering X = (what A *said* by uttering X)•(what A implied)

(i) What A intended to say by uttering X

(ii) What a reasonable rational interpreter would think A intended to say by uttering X

“It is the *coincidence itself* of (i) and (ii) that constitutes success, and it is the potential for such coincidence, *independent of some third thing*, that *gives sense* to the very idea of saying. .. When all goes well, they coincide, and it’s just too bad that they don’t always do so.” (183) “There is simply no role for a transcendent notion of what was referred to upon (i) and (ii)... when all goes well they [(i) and (ii)] coincide and it’s just too bad that they don’t always do so.” (185)

³⁷ It proves difficult to separate theories of syntactic/semantic competence, though straightforward to separate theories of pragmatic/semantic competence (and the latter shouldn’t be overlaid with the implying/saying distinction). (188- 189) LF semantics will provide the ‘kinematics’ (explaining how the syntactic [compositional semantic] of a sentence and [lexical semantic] meanings of individual words “conspire to constrain what the speaker can *say*.” (189)

Knowing what A is referring to, or A's word meaning, or A's sentence syntax is *insufficient to know what A is saying* (even) in an unambiguous declarative sentence X.

- **(Metaphysical) Underdetermination Thesis (UT)**

What A *says* in uttering (even in) an unambiguous declarative sentence X is *underdetermined* by X's word meaning, X's sentence syntax, X's component of reference.

The above methodological and metatheoretic issues presented by Neale and briefly summarized above suggest a thematic resonance with a claim made in the philosophy of science by Mathias Frisch:

[W]e [can be] ... committed to the claim that a theory is *reliable*, but...not committed to the literal *truth* of its empirical consequences. *This does not mean we have to be instrumentalists...*a scientific realist [for instance] might be committed to the reality of electrons and fields, yet demand only that electromagnetic models represent the behavior of these 'unobservables' reliably, while an empiricist could be content with the fact that the models are reliable as far as the theory's observable consequences are concerned. ((2005) 42)

To sharpen the analogy, Stephen Neale certainly adopts a metaphysically realist commitment towards *speaker intentions* (like the scientific realist's commitment to electrons and fields). However, based on the combined force of (IT) & (UT) one may readily agree, according to Frisch's claim, that for Neale, regardless of the degree of refinement and articulation some general theory of utterance interpretation (TUI) may eventually evolve into, the best hope for the theorist is that such a TUI's models (classes of LFs) *reliably model* any linguistic phenomenon of utterance interpretation (suitably idealized and restricted to unambiguous declarative sentences.³⁸) By extension, (recall the discussion in section II.above) whether or not speaker's intentions actually harbor properties akin to structured propositions lies outside the scope of any possible TUI. At best, the theorist should view sentential LFs as characterized by the TUI as reliably modeling whatever (structured-propositional or otherwise) may constitute speaker intentions.³⁹

³⁸ An obviously unrealistic hope. More to the point, that such a TUI or research program can in principle prove flexible enough to undergo revisions in the face of inevitable counterexamples in such a manner as not to be jettisoned entirely, or altered beyond recognition (when it comes to its fundamental methodological principles).

³⁹ Even this is a rather exaggerated metaphysical aspiration, when viewed through the above mentioned Indetermination claims, which one may assume are limits-in-principle, not practical limitations. Be this as it may, however, on the other extreme one should not construe Neale as a sententialist (i.e. denying in the existence of propositions ultimately constituting the contents of PARs). His empiricism makes him metaphysically agnostic, regarding such an issue. As he points out in numerous places, the theorist should not hope for any TUI (present or future) to deliver any account, explanatory or otherwise, that is ultimately more refined than the sentential contents (characterized in LFs) can deliver, of *actual utterances*.

Characterizing Neale’s empirical outlook vis-à-vis the relationship of a theory’s (TUI)’s models’ reliability (instead of literal truth) concerning the (natural language) phenomena in the somewhat broadly metatheoretic remarks mentioned above, places his specific results concerning binding and ambiguity in a proper context. Regarding the issue of binding (and scope⁴⁰), his revised Binding Principle (A₇)⁴¹ enables him to conclude:

[C]onceptually...*merging*⁴² is what creates scope. The primary role that DP [determiner phrase] plays in creating a sentence—merging with VP [verb phrase]—is a role it replicates in the creation of further DPs: it merges with NP [noun phrase] in the same way it merges with VP, except that it does so in a possessive form and functions syntactically as a D. The act of merging creates a subject’s scope, and a reflexive within its scope is *bindable*, thus closing off the binding question. (272)

So, for instance, concerning the example S_3 discussed above: “Some man_x thinks (that) Joe₂ heard him_y”, merging the quantified NP expression α = ‘some man’ with the VP β = ‘thinks Joe heard him’ makes a *bound* reading of ‘him’ possible, as it (can) lie in the scope of α (in the exclusive sense.⁴³)

We appear now [i.e. after appropriate modifications, generalizations, and simplifications to standard Binding Theory Neale introduces] to have a complete theory of bound pronouns, one according to which quantifiers, names, and pronouns can all bind pronouns, indeed one that makes semantic sense of the seemingly transitive binding in a sentence⁴⁴ ...and at the same time respects the Binding Theory. (244)

⁴⁰ Binding and scope are of course related, according to standard Binding Theory (which Neale doesn’t dispute, only modifies.) Note 33 above indicated for instance how Neale modifies Principle A. The standard definition of scope (212):

For any *sentence operator* α , α ’s scope = the smallest *sentence* properly containing α .
Neale modifies to the simpler and more general (ibid):

For any *expression* α , α ’s scope = the smallest *constituent* properly containing α .
Moreover, the according to (usual) Binding Theory:

“ α binds β iff (i) α and β are *co-indexed*, and (ii) β is within the scope of α . Of course, much turns on what is meant by ‘scope’ here.” (211)

⁴¹ For details, see n. 33 above.

⁴² Which is assumed (primitively) as a fundamental mode of combining words to form expressions, expressions to form phrases, phrases to form sentences, etc. (However Pietroski (2006) offers an explanatory account of this phenomenon.) Neale (213) offers two characterizations of ‘scope’ (inclusive – “familiar to philosophers and logicians,” and exclusive, “more familiar to linguists.”):

(Inclusive). If α and β merge to form $\{\alpha\beta\}$, then $\{\alpha\beta\}$ = scope of α = scope of β .

(Exclusive). If α and β merge to form $\{\alpha\beta\}$, then α = scope of β , and β = scope of α .

⁴³ See n. 40, above. Also, as mentioned in n. 33 above, this bound reading is sanctioned by Neale’s modified Binding Principle A₇ but not by the original Binding Principle A.

⁴⁴ See Disanalogy 2 in Table III.3 above. The example Neale adopts here to bolster his claim involves the sentence: “John says that he loves his wife.” The binding is transitive, as John binds ‘he,’ and ‘he’ binds ‘his.’ However, according to standard Binding Theory’s Principle A, this presents a problem, as ‘his’ lies outside John’s scope (if ‘John’ can be taken as a quantifier) since ‘scope’ is defined (in standard Binding Theory) in terms of phrases (or sequences) of minimal length. Hence (cf Disanalogy 2, Table III.3) ‘his’ is “too far,” and no “too close.” Neale casts the above in Tarskian Russellian LF as:

[John_x] (x says that([he_y : y = x]([his_z : z wife_y](y loves z))))

However one agrees or disagrees Neale's above claims, and to whatever extent, if nothing else he certainly seems to provide more explanatory to account for the nuances of natural linguistic phenomena involving pronouns (as indicated for instance by the disanalogies in Table III.3) than Recanati's (2005) more abstract characterizations of binding in terms of a generalized notion of anaphora.⁴⁵

In terms of ambiguity, borrowing from data encountered in Icelandic, Neale posits two meanings for third-person possessive pronouns (272-278), reflexive and non-reflexive, respectively.⁴⁶ For instance, the ambiguity between bound ($y = x$) and free ($y \neq x$) uses in the sentence: "Sally_x loves her_y dog" would be accounted for in the above stipulated bifurcation, via sentential meaning alone. Neale classifies the free use ($y \neq x$) in the above sentence as unbounded versus (reflexive) bound ($y = x$). Inserting a PA-verb and an associated NP in its clause: "Sally_x knows that June_y loves her_z dog" introduces bound ($z = x$), anaphoric ($z = y$), and free ($z \neq x$ and $y \neq x$) uses, corresponding to what bound-reflexive, bound non-reflexive, and unbounded senses, respectively (274-276). As in the previous example involving S_3 above, the 'her' assumes a *de re* reading in ($z = x$), whereas a *de dicto* reading in the anaphoric ($z = y$), and free ($z \neq x$ and $y \neq x$) uses.⁴⁷

...where terms *John* and pronouns 'he,' 'his' are treated as quantifiers according to the following Tarskian axiomatizations (p. 236, 239, 244, respectively):

[*he* x_k : Φ] Ψ is true of a sequence s iff Ψ is true of every sequence that Φ is true of differing from s at most in the k -th position, and there is exactly one such sequence.

[*his* x_k : Φ] Ψ is true of a sequence s iff Ψ is true of every sequence that $\Phi \bullet R(x_k, x_j)$ is true of differing from s at most in the k -th position, and there is exactly one such sequence. (Where R is a generalized possessive marker relation, instantiating, for example, "owned or rode or trained [whatever] the case may be." (238))

[*John* x_k] Ψ is true of a sequence s iff Ψ is true of every sequence with John in the k -th place differing from s at most in what it assigns to x_k and there is exactly one such sequence.

⁴⁵ See, for instance, n. 14, n. 18, n. 29 above.

⁴⁶ In Icelandic, the (reflexive) 'his' – *sina*, non-reflexive 'his' – *hans*. (273)

⁴⁷ Neale also discusses more complex readings of *de dicto* which he claims other theorists (like Garreth Evans, as articulated in *The Varieties of Reference* (1982), and *Collected Papers* (1985)) cannot account for (n. 150, 255). For instance, the distinction between:

- (i) 'Mary_x wants to marry a wealthy man_y. He_z must be a millionaire.'
- (ii) 'Mary_x wants to marry a wealthy man_y. He_z is a millionaire.'

In the anaphoric case ($y = z$), enables the first sentence a *de dicto* reading. On the other hand, (according to Evans' theory) "[i]n (ii) it is not possible to get the *de dicto* reading for the antecedent clause if 'he' is...anaphoric on 'a wealthy man.'...the sentence has no felicitous reading when the antecedent clause is read *de dicto*." (ibid.)

IV. Concluding Remarks

Harkening back to some of the more general issues raised concerning the *de re / de dicto* distinction itself (as discussed in sections I. & II. above) I mention here in passing Kit Fine's (2005) defense of a particular form of *modal actualism*⁴⁸ which, among other things, he applies to defend the notion of three irreducible versions of modality: logical, analytical, and metaphysical:⁴⁹

A logical necessity has its source in logical form. An analytical necessity has its source in meaning...in an analogous manner...a metaphysical necessity has its source in the identity of objects; it is true, or necessary, in virtue of the objects with which it implicitly deals. This account [of metaphysical necessity] is meant to cover not only the obvious cases of *de re* necessity but also the less obvious cases of *de dicto* modality. [For example] the necessary truth that all bachelors are unmarried has its source in the concept of being a bachelor just as the necessary truth that Socrates is a man has its source in the identity of Socrates. ((2005), 7)

Kit Fine's arguments for his version of modal actualism thus seem to appropriately underwrite Nelson & McKay's (2005b) stipulated categories of syntactic, semantic, and metaphysical *de re / de dicto* (as discussed in section I. above) in the most desirable manner.⁵⁰ Indeed, Fine's notions

⁴⁸ How he defends this position is a topic lying outside the scope of this essay. Very briefly, however, one may summarize his modal actualism as an "approach...to treat ordinary quantification over possible objects as a special way of quantifying over actual objects...to say that some possible object is a certain way is to say that possibly some object is that way." ((2005) 12). This however is by no means some unqualified version of a reduction from *de re* to *de dicto* involving the modal operator \diamond . Though at first blush it may read that way, since translating the above into LF produces:

$$(\exists x: \diamond o(x) \rightarrow \Psi(x)) \Rightarrow \diamond (\exists x: o(x) \rightarrow \Psi(x))$$

for monadic predicates 'object' (o) and 'being some way' (Ψ).

For one thing, the above (reduction) "only works when the condition attributed to the object is itself modal." (ibid.) Other restrictions on (Ψ) apply as well (12-13).

⁴⁹ Hence opposing empirically-based Quinean arguments that attack the very coherence of a notion of modality. "Empiricists have always been suspicious of modal notions. For them, the world is an on-or-off matter...there appears to be no room in their on-or-off world for a distinction between what happens of necessity and what only happens contingently or between the essential features of an object and those that are only accidental." (1) Likewise he sets his arguments against the 'modal realism' of Lewis: "[A]u fond, Lewis is as skeptical of modal notions as Quine. Neither can understand modality except as a form of regularity; and the only difference between them lies in the range of the regularities to which their respective ontologies allow them to appeal." (2) Furthermore, the irreducibility of the respectively three categories is likewise significant, as he sets himself against what he considers is a 'fashionable trend' among modalists to reduce all notions of modality to the metaphysical kind. "Philosophers with a new concept are like children with a new toy; their world shrinks to one in which it takes center stage. Now there can be no doubt that...preoccupation with metaphysical modality has had a beneficial effect on the discussion of a number of philosophical topics. But there is a danger of its becoming a new restrictive orthodoxy..." (10).

⁵⁰ Among other things, aside from taking modal notions seriously (as opposed to Quinean eliminativism) Fine's approach likewise defends a version of structured-propositionalism (recall n. 11 above). Fine would accuse unstructured-propositionalists as being 'modally myopic.' "The tendency to conflate or to collapse the different forms of necessity is an instance of modal myopia...[an instance being the unstructured-propositionalist who argue that] the content of a sentence...is often identified with set of all possible worlds in which it holds true...[However] a much more satisfactory account of content may be obtained by

of logical, analytical, and metaphysical necessity find their more general counterparts in the syntactic, semantic, and metaphysical notions, respectively.⁵¹

When investigating a natural phenomenon like natural language utterance interpretation, with all its sundry ‘interaction effects’ between speaker(s) and hearer(s) as well as among their associated presumed cognitive-intentional and phonetic-production systems (dealing with LF and PF, respectively modulo the strict limitations imposed by syntactic and semantic form⁵²) I submit the claim that it is best to adopt a methodological position incorporating Neale’s empiricism, underwritten by Fine’s modal actualism. For they work in tandem in such a manner as to exhibit optimal sensitivity to the nuances and perpetual novelties that inevitably come down the pipeline in the form of hard cases or counterexamples.⁵³ This is not some grand metaphysical claim I am submitting, but merely a practical methodological *stance* I am suggesting for the researcher to best approach the intricate and nuanced character of natural language phenomena. “[Natural language] semantics is concerned with ‘internalist’ features of linguistic expression, rather than truth *per se*.” (Pietroski (2003), 1) To put it another way, regardless how one may haggle over the ultimate question of the status of modalities, natural language operates in such a manner *as if* a plurality of modalities exist: The variety of deontological, epistemic, temporal modal notions one can utter simply in the case of simple PARs indicate that in any case, such a modal pluralism *matters*. Kit Fine’s modal actualism, in his stipulation of three fundamentally distinct senses (logical, analytical, and metaphysical) seems naturally to accommodate this concrete fact concerning the ‘varieties of modality’⁵⁴ naturally inherent in the semantic space of natural language.

In a series of papers dealing with the nature of the interrelation between conceivability and possibility—an intersection of metaphysical, epistemological, and logical notions similar to those engaged in by Neale and Fine—Tamar Szabo and Michael Hawthorne ((2002) 4-5) speak of three senses of ‘possibility’ in increasing order of generality: nomological (what is possible modulo

appealing to *analytically* possible worlds (as was customary in the earlier semantic tradition)...there is no reason to expect that the concept of necessity that is most pertinent to metaphysics should be capable of doing double duty as the concept that is also most pertinent to the study of semantics.” (10)

⁵¹ For example, the identity of the object (Socrates) discussed by Fine in the above passage as metaphysically *de re*, is likewise in accord with Nelson & McKay’s (2005b) notion of metaphysical *de re*. *Certainly*, the property of ‘being identical to’ would directly involve the object. On the other hand, for the case of ‘unmarried male’ and ‘bachelor’ this likewise corresponds to metaphysical *de dicto* in McKay & Nelson’s sense (as it does in Fine’s sense as well). For the property ‘unmarried male’ *indirectly involves* the object (bachelor) in the sense that ‘unmarried male’ *is something said* (i.e., *de dicto*) of it.

⁵² Which has the effect according to Neale’s indeterminacy theses, of radically delimiting all what a speaker may *intend* to say, as well as what a hearer may be *able* to understand (from syntactic and semantic form) *even* in the case of unambiguous declarative statements.

⁵³ Recall, for instance, Neale’s revisions of Binding Theory, as discussed in section III.c above.

⁵⁴ To borrow a title from one of his essays.

natural laws or law-like generalities), metaphysical (what is possible according to statements dealing with ultimate kinds of objects and their properties), and logical (what will not produce a contradiction). To the researcher engaged in the study of a natural phenomenon like natural language, assumed to be governed by laws or law-like generalities, she or he is ultimately concerned with what is *nomologically* possible, as dictated by the scope of his or her theories of sentential LF.⁵⁵ This should be kept separate from the questions concerning what is *metaphysically possible*: i.e. questions concerning the status of structured propositionalism and modality, let alone what is *logically possible*. Logicians of course deal primarily with formal language, while metaphysicians with a kind of ‘halfway-house’ between formal and natural language.⁵⁶

Although these methodological points I making here may seem rather obvious, the risk of researchers confusing such categories in their methodological presuppositions seems nevertheless real enough. For instance, the researcher of natural language too heavily invested in an excessively formal approach may easily overlook the structural and scope ambiguities that *actually* occur in natural language (i.e. what is nomologically possible) as his or her attention may be too heavily placed on such ambiguities as they arise in a *logically* possible sense, i.e. constituted by the artificial contexts of formal languages alone.⁵⁷ *Actual* sentential LF does *not* mirror with equal likelihood, even in domains where a correspondence may hold at all, what occurs in the space of metaphysical or logical possibility (suitably contextualized by their associated semi-artificial and purely artificial languages, respectively).

⁵⁵ Recall, for instance, as mentioned in n. 25 above, Pietroski & Hornstein’s (2002) argument that a *de re* reading of the PAR they investigate is not possible according to the laws of syntactic composition of the LFs in sentences they hypothesize in.

⁵⁶ When doing metaphysics, the philosopher should take care to: (a) Utter sentences with no restriction of reference in force (‘There’s no beer’ becomes a metaphysical statement when abstracted away from reference to contexts like empty refrigerators, etc.) (b) Statements should represent serious attempts on part of the speaker to utter literal truth (as much as that is reasonably possible). (Inwagen & Zimmerman (1998), 3)

⁵⁷ Neale (2005) expresses throughout in his essay his disdain and skepticism directed toward those who seek to meet every challenge posed by the nuances of natural language by automatically stipulating (in a formal language) contexts, with their associated indexicals (mostly referring to aphonetic elements), of greater and greater complexity as to resemble ‘lights on a Christmas tree.’ “[W]hile formal contexts may have a useful *methodological* role from time to time, they are strictly irrelevant to a proper theory of utterance interpretation.” (199) As for an example of ‘useful methodology’ one considers Davidson and Montague’s ‘bold conjecture,’ for instance, in which the methods of compositional semantics for formal languages were thought to apply to the semantics of natural languages as well. This maneuver is *not* to be confused, however, with seeking to account for all empirical nuances subjected by context by positing ever increasingly Baroque formal systems describing indexicals. “Utterances do not come with such devices [i.e. formal indices] that anchor and co-anchor indexical, demonstrative, or anaphoric pronouns [for example]. The hearer has plenty of *pragmatic* work to do, much of it rightly called inferential, albeit inferential in a way that is steered by the meanings of individual words.” (201)

The complex and nuanced binding properties of pronouns reflect what is *nomologically* possible given natural language sentential LF form, while the unproblematic case of binding properties for logical variables reflect what is *logically* possible given the simply and suitably idealized space of formal languages. To reiterate one of Neale’s central claims here: pronouns definitely do *not* act like logical variables. Granted, what is nomologically possible forms a subset of what is logically possible, but such a subset no doubt exhibits a rather complex topology indeed—reflective of course of the contingencies of natural phenomena. In the case of the phenomenon of natural language, Neale’s empirical recommendations might best guide the researcher into uncovering such a ‘topology’ as best as she or he can, given all the associated constraints as laid out in his underdetermination theses. In this respect, the associated syntactic, semantic, and metaphysical senses of *de re / de dicto*—underwritten as they are by Fine’s modal actualism—serve as useful heuristic and diagnostic devices for investigating further issues associated with pronominal binding in utterance interpretation.

V. References

- Austin, J. L. *How To Do Things With Words*, Urmson, J. O., & Sbisí, M. eds., Harvard U. Press, 1962.
- Bach, Kent. “Content *ex Machina*,” *Semantics versus Pragmatics* (Szabo. Ed) Clarendon 2005, 15-44.
- Brook, Andrew & DeVidi, Richard (eds.), *Self-Reference and Self-awareness : Advances in Consciousness Research*, vol. 30. Amsterdam: John Benjamins Publishing, 2001.
- Chomski, Noam. “Knowledge of Language: Its Nature, Origin, and Use,” 1985
- Cook, V. J., *Chomski’s Universal Grammar : An Introduction*, Applied Language Studies (Crystal, David & Johnson, K., eds.) Cambridge, MA: Basil Blackwell, 1988.
- Fine, Kit. *Modality and Tense: Philosophical Papers*. Oxford: Clarendon Press, 2005.
- Flew, Anthony. *A Dictionary of Philosophy* (2nd edn.). New York: St. Martin’s Press, 1979.
- Frisch, Mathias (2005) *Inconsistency, Asymmetry, and Non-Locality : A Philosophical Investigation of Classical Electrodynamics*. Oxford: Oxford University Press.
- Gareth Evans, “Semantic Structure and Logical Form,” ch. 3, *Collected Papers*, Clarendon 1985.
- Gendler, Tamar & Hawthorne, John. *Conceivability and Possibility*. Oxford: Clarendon Press, 2002.
- Hahn, Lewis & Schilpp, Paul. *The Philosophy of W. V. Quine*. LaSalle: Open Court, 1986.

- Inwagen, Peter & Zimmerman, Dean (eds). *Metaphysics : The Big Questions*. Blackwell: 1998.
- Kripke, Saul. "Identity and Necessity," in *Perspectives in the Philosophy of Language: A Concise Anthology*. Stainton, Robert (ed.) (Broadview, 2000) 93-121.
- Neale, Stephen "Pragmatism and Binding," *Semantics versus Pragmatics* (Zoltan G. Szabo., ed) Clarendon 2005, 166-285.
- Nelson, Thomas & McKay, Thomas (2005a). "Propositional Attitude Reports." Stanford Encyclopedia of Philosophy (on-line).
<http://plato.stanford.edu/entries/prop-attitude-reports/index.html>
- Nelson, Thomas & McKay, Thomas (2005b). "The De Re/De Dicto Distinction." (Supplement to "Propositional Attitude Reports.") Stanford Encyclopedia of Philosophy (on-line).
<http://plato.stanford.edu/entries/prop-attitude-reports/dere.html>
- Pietroski, Paul & Hornstein, Norbert (2002). "Does every Sentence Like This Exhibit a Scope Ambiguity?" in *Belief and Meaning*, (W Hinzen & Rott eds.) Hansel-Hohenhausen
<http://www.wam.umd.edu/~pietro/papers/index.htm>
- Pietroski, Paul (2003). "The Character of Natural Language Semantics," in *Epistemology of Language* (Alex Barber, ed.) Oxford University Press: 2003.
<http://www.wam.umd.edu/~pietro/papers/index.htm>
- Pietroski, Paul (2004). "Logical Form," *Stanford Encyclopedia of Philosophy* (on-line)
<http://plato.stanford.edu/entries/logical-form/>
- Pietroski, Paul (2006). "Interpreting Concatenation and Concatenates," forthcoming in *Philosophical Issues*. <http://www.wam.umd.edu/~pietro/papers/index.htm>
- Recanati, Francois, *Literal Meaning*, Cambridge U Press, 2004.
- Recanati, Francois. "Deixis and Anaphora," *Semantics versus Pragmatics* (Szabo. Ed) Clarendon: 2005, 286-316.
- Schurtz, Gerhard. *The Is-Ought Problem: An Investigation in Philosophical Logic*. Dordrecht: Kluwer, 1997.
- Stanley, Jason. "Philosophy of Language in the Twentieth Century." Manuscript, 2006.
- Szabo, Tamar Gendler and Hawthorne, John, eds (2002). *Conceivability and Possibility*. Oxford: Clarendon Press
- Szabo, Zoltan, "Introduction," *Semantics versus Pragmatics* (Szabo. Ed) Clarendon 2005, 1-14.
- Van Inwagen, Peter & Zimmerman, Dean, eds. *Metaphysics: The Big Questions*. Malden, MA: Blackwell, 1998.